

# CHICAGO

## Electric<sup>®</sup> Power Tools

### 4-1/2" ANGLE GRINDER

**Model 43471**

#### ASSEMBLY AND OPERATION INSTRUCTIONS

Due to continuing improvements, actual product may differ slightly from the product described herein.



3491 Mission Oaks Blvd., Camarillo, CA 93011

Visit our website at: <http://www.harborfreight.com>

**TO PREVENT SERIOUS INJURY, READ AND UNDERSTAND  
ALL WARNINGS AND INSTRUCTIONS BEFORE USE.**

Copyright© 2001, 2007 by Harbor Freight Tools<sup>®</sup>. All rights reserved. No portion of this manual or any artwork contained herein may be reproduced in any shape or form without the express written consent of Harbor Freight Tools.

**For technical questions or replacement parts, please call 1-800-444-3353.**

Manual Revised 07d

---

## SPECIFICATIONS

---

Power Source	120 V~, 60 Hz, 4.8 / 2.1 / 3 A (Start Up / No Load / Load)
Speed	n <sub>0</sub> 11,000/min
Wheel Type	4-1/2" Diameter Grinding Wheel (115 mm x 6 mm)
Arbor	.872" Diameter
Switch	Slider Lock On, Touch Off
Power Cord	6' 6" Two Pronged, Polarized, 18 AWG



### Save This Manual

You will need the manual for the safety warnings and precautions, assembly instructions, operating and maintenance procedures, parts list and diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Keep the manual and invoice in a safe and dry place for future reference.

---

## SAFETY WARNINGS AND PRECAUTIONS

---

**WARNING:** When using tool, basic safety precautions should always be followed to reduce the risk of personal injury and damage to equipment.

### **Read all instructions before using this tool!**

1. **Keep work area clean.** Cluttered areas invite injuries.
2. **Observe work area conditions.** Do not use machines or power tools in damp or wet locations. Don't expose to rain. Keep work area well lighted. Do not use electrically powered tools in the presence of flammable gases or liquids.
3. **Keep children away.** Children must never be allowed in the work area. Do not let them handle machines, tools, or extension cords.
4. **Store idle equipment.** When not in use, tools must be stored in a dry location to inhibit rust. Always lock up tools and keep out of reach of children.
5. **Do not force tool.** It will do the job better and more safely at the rate for which it was intended. Do not use inappropriate attachments in an attempt to exceed the tool capacity.
6. **Use the right tool for the job.** Do not attempt to force a small tool or attachment to do the work of a larger industrial tool. There are certain applications for which this tool was designed. Do not modify this tool and do not use this tool for a purpose for which it was not intended.
7. **Dress properly.** Do not wear loose clothing or jewelry as they can be caught in moving parts. Protective, electrically nonconductive clothes and nonskid footwear are recommended when working. Wear restrictive hair covering to contain long hair.
8. **Use eye, ear and face protection.** Always wear ANSI approved impact safety goggles. Always wear ear plugs when operating this tool. Wear a full face shield if you are pro-

ducing metal filings or wood chips. Wear an ANSI approved dust mask or respirator when working around metal, wood, and chemical dusts and mists.

9. **Do not overreach.** Keep proper footing and balance at all times. Do not reach over or across running machines.
10. **Maintain tools with care.** Keep tools sharp and clean for better and safer performance. Follow instructions for lubricating and changing accessories. Inspect tool cords periodically and, if damaged, have them repaired by an authorized technician. The handles must be kept clean, dry, and free from oil and grease at all times.
11. **Disconnect power.** Unplug tool when not in use.
12. **Remove adjusting wrenches.** Check that adjusting wrenches are removed from the tool or machine work surface before plugging it in.
13. **Avoid unintentional starting.** Be sure the switch is in the Off position when not in use and before plugging in. Do not carry any tool with your finger on the switch, whether it is plugged in or not.
14. **Stay alert.** Watch what you are doing, use common sense. Do not operate any tool when you are tired.
15. **Take caution as some woods contain preservatives such as copper chromium arsenate (CCA) which can be toxic.** When cutting these materials extra care should be taken to avoid inhalation and minimize skin contact.
16. **Check for damaged parts.** Before using any tool, any part that appears damaged should be carefully checked to determine that it will operate properly and perform its intended function. Check for alignment and binding of moving parts; any broken parts or mounting fixtures; and any other condition that may affect proper operation. Any part that is damaged should be properly repaired or replaced by a qualified technician. Do not use the tool if any switch does not turn On and Off properly.
17. **Guard against electric shock.** Prevent body contact with grounded surfaces such as pipes, radiators, ranges, and refrigerator enclosures.
18. **Replacement parts and accessories.** When servicing, use only identical replacement parts. Use of any other parts will void the warranty. Only use accessories intended for use with this tool. Approved accessories are available from Harbor Freight Tools.
19. **Do not operate tool if under the influence of alcohol or drugs.** Read warning labels on prescriptions to determine if your judgment or reflexes are impaired while taking drugs. If there is any doubt, do not operate the tool.
20. **Use proper size and type extension cord.** If an extension cord is required, it must be of the proper size and type to supply the correct current to the tool without heating up. Otherwise, the extension cord could melt and catch fire, or cause electrical damage to the tool. This tool requires use of an extension cord of **0 to 10 amps** capability (up to 50 feet), with wire size rated at **18 AWG**. Longer extension cords require larger size wire. If you are using the tool outdoors, use an extension cord rated for outdoor use (signified by "WA" on the jacket).

- 21. **Maintenance.** For your safety, maintenance should be performed regularly by a qualified technician.
- 22. **There are certain applications for which this tool was designed.** This tool shall not be modified and/or used for any application other than which it was designed.
- 23. **All accessories must be rated for at least the RPM speed recommended on the tool's warning label.** Wheels and other accessories running over rated speed can fly apart and cause injury.

24. **For safe operation, only these accessories can be used with this product:**

Abrasive Cut-Off Discs and Wheels	Flap Wheels
Wire Brushes	Wire Wheel Brushes

- 25. **Always use an approved and proper guard when using the above mentioned accessories. Each accessory must have the correct arbor size and must fit properly on the shoulder bushing. Make sure accessories are tightened down securely.**
- 26. **NEVER INSTALL A CIRCULAR SAW BLADE FOR USE ON THIS ANGLE GRINDER. NEVER INSTALL A WOOD CARVING BLADE, CARVING DISC WITH SAW CHAIN CUTTERS, OR A CUTTING CARVING DISC ON THIS ANGLE GRINDER.**
- 27. **Warning! Always use an approved and proper guard when using the recommended accessories (listed on page 5). Each accessory must have the correct arbor size and must fit properly on the shoulder bushing. Make sure accessories tightened down securely. Never install a carbide tipped or steel circular saw blade for use on this Angle Grinder. Never install a wood carving blade, carving disc with saw chain cutters, or cutting-carving disc.**
- 28. **WARNING: Some dust created by power sanding, sawing, grinding, drilling, and other construction activities, contains chemicals known [to the State of California] to cause cancer, birth defects or other reproductive harm.** Some examples of these chemicals are:  
 Lead from lead-based paints  
 Crystalline silica from bricks and cement or other masonry products  
 Arsenic and chromium from chemically treated lumber  
 Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals: work in a well ventilated area, and work with approved safety equipment, such as those dust masks that are specially designed to filter out microscopic particles.  
 (California Health & Safety Code § 25249.5, *et seq.*)
- 29. **Warning: The warnings, cautions, and instructions discussed in this instruction manual cannot cover all possible conditions and situations that may occur.** It must be understood by the operator that common sense and caution are factors which cannot be built into this product, but must be supplied by the operator.

**Note:** Performance of this tool (if powered by line voltage) may vary depending on variations in local line voltage. Extension cord usage may also affect tool performance.

---

## UNPACKING

---

When unpacking, check to make sure the parts listed on page 6 are included. If any parts are missing or broken, please call Harbor Freight Tools at the number on the cover of this manual as soon as possible.

---

## ASSEMBLY

---

**Warning!** Make sure the unit is unplugged before assembling, or when changing discs.

1. Screw the threaded end of the **Side Handle (18)** into the threaded hole to the right of the **Gear Box (17)**. See Assembly Drawing.
2. With one hand, hold the body of the Grinder while depressing the **Stop Pin (1)**.
3. With the other hand, insert the two tabs on the **Wrench (56)** into the holes on the **Flange Nut (35)**. Loosen the **Flange Nut (35)** by turning it counterclockwise. Remove the **Flange Nut (35)**.
4. Place the **Wheel (34)** over the **Spindle (30)** and onto the **Flange (33)**.
5. Replace the **Flange Nut (35)** by turning it clockwise.
6. The Angle Grinder is ready for use.

---

## OPERATION

---

**Note:** For safe operation, only these accessories can be used with this product: 4-1/2" diameter Grinding Wheel (included with this product), Abrasive Cutoff Discs, Flap Wheels, Wire Brushes, and Wire Wheel Brushes.

1. Plug in the **Cord Plug (55)**.
2. Firmly grasp the **Side Handle (18)** with one hand, and the body with the other.
3. Make sure the **Protecting Cover (32)** is between you and the grinding wheel. If necessary, turn off the Grinder, unplug it, and rotate the **Protecting Cover (32)**.
4. For grinding or cutting, approach your workpiece at an angle between 15 and 30 degrees. Remember to let the wheel do the work. Do not force it or put too much pressure on the Grinder. **Caution: Always be alert to the possibility of kickback. Always firmly hold tool with both hands.**
5. Slide the **Switch (50)** until it locks on. To turn it off, just press down on the **Switch (50)** and it will unlock.

---

## MAINTENANCE

---

1. Periodically blow out motor vents with compressed air.
2. Clean plastic with a damp cloth. Never use solvents.
3. No lubrication required.
4. If performance lacks, change the Carbon **Brush (44)**.
  - a. Using a screwdriver, unscrew the **Brush Cap (45)**.
  - b. Remove the **Brush (44)** from the **Brush Holder (43)**.
  - c. Replace with an identical replacement part from Harbor Freight Tools.
  - d. Replace **Brush Holder (43)** and **Brush Cap (45)**.

---

## LIMITED 90 DAY WARRANTY

---

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

**3491 Mission Oaks Blvd. • PO Box 6009 • Camarillo, CA 93011 • (800) 444-3353**

## PARTS LIST

Part	Description
1	Stop Pin
2	Spring Washer
3	Check Ring
4	Nut
5	Spring Washer
6	Pinion Gear
7	Bearing
8	Check Ring
9	Fan Guide
10	Roller
11	Armature
12	Bearing
13	Rubber Bearing Shoe
14	Screw
15	Screw
16	Screw
17	Gear Box
18	Side Handle

Part	Description
20	Axle Bearing
21	Check Ring
22	Spring Ring
23	Gear
25	Bearing Cap
26	Bearing
28	Screw
29	Woodruff Key
30	Spindle
31	Screw
32	Protecting Cover
33	Flange
34	Wheel
35	Flange Nut
36	Screw
37	Stator
38	Switch
39	Spring

Part	Description
40	Switch Draw-Bar
41	Cabinet
42	Condenser
43	Brush Holder
44	Brush
45	Brush Cap
46	Switch Cover
47	Screw
48	Cord Clamp
49	Screw
50	Switch
51	Cord Armor
52	Washer
53	Screw
54	Cord Plug
55	Cord Plug
56	Wrench

### PLEASE READ THE FOLLOWING CAREFULLY

THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

**Record Product's Serial Number Here:** \_\_\_\_\_

**Note:** If product has no serial number, record month and year of purchase instead.

**Note:** Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.

# ASSEMBLY DRAWING

